result in the need to construct an additional leach pad(s) and associated facilities, including PLS collection facilities and stormwater impoundment structures. An economic analysis was not prepared for this logistically impractical alternative.

2.3.9. Alternative I: Single Reduced Leach Pad/Crush Convey/Haul Truck Placement (PDSI's Preferred Alternative). In developing PDSI's preferred alternative, the mobile elevating conveyor/stacker system proposed in Alternative B was compared to conventional placement using haulage trucks. Alternative I (Figure 10), uses conventional truck haulage for placement of crushed ore. This Alternative, Alternative I, results in reduced surface area requirements (ca. 316 acres less than Alternative B) and reduced impacts to Jurisdictional Waters (ca. 3.68 acres less than Alternative B). Reduced surface area impacts result from increasing the 4H:1V slope on the east side of the leach pad to 2H:1V. All other facilities would be as described for Alternative B.

Planning the leach pad for a 400-450 ft. height will allow for potential increases to the minable reserve which are possible given the confidence level on leach material recovery estimates and reserve definition based on current leach column test work and exploration drilling information.

Practicability Determination: This alternative is considered practicable. The single leach pad configuration was chosen based on the reduced impacts to jurisdictional waters of the U.S. and decreased capital requirements of material handling, PLS collection, and stormwater containment facilities when compared to Alternatives A and B. Economic information regarding the internal rate of return and the net present value of the cash flow associated with this alternative meets or exceeds the established economic practicability criteria.

2.3.10. Alternative J: Develop Sanchez Mine First. Under this alternative, PDSI would implement mining operations authorized in the final Sanchez Copper Mine Plan of Operations EIS (Figure 11) prior to development of the Dos Pobres/San Juan Project. PDSI acquired the Arizona Copper Company's (AZCO) interest in the Sanchez project in late 1995. The Sanchez mine would be constructed on approximately 1,400 acres of BLM administered public land. The anticipated life of the mine is approximately 17 years.

The Sanchez pit would be approximately 277 acres, with a maximum pit depth of approximately 1,200 feet below the surface elevation. Under the current mine plan, production operations facilities would include a single leach stockpile (484 acres) and SX/EW plant, and three development rock stockpiles covering approximately 487 acres.

Practicability Determination: This alternative is not practicable. Although the Sanchez mine currently has an approved MPO, development of the mine prior to Dos Pobres and San Juan would not be practicable based on PDSI's existing knowledge of the deposit. The existing technical data regarding metallurgical characterization and ore body description are incomplete and certain aspects of engineering design, including plant design and size, need further evaluation.

At this time PDSI is in the process of verifying the information collected by the AZCO and other prior owners of the Sanchez Mine. The collection of this information involves an exploration drilling program designed to confirm the nature and extent of the resource. Concurrently, the samples collected from prior exploration of the property are being re-assayed to verify existing information and gather further information relevant to evaluating the deposit. Following completion of reserve verification, a new geologic block model will be constructed in a manner consistent with the methods utilized at Dos Pobres and San Juan. A series of metallurgical tests must be completed to determine the leachable characteristics of the various ore types defined by this block model.

In addition, studies are required to evaluate potential inflow of water to the pit from the Gila River. Based upon PDSI's current understanding of regional hydrology, they believe that development of the pit without safeguards to limit pit water inflow could have adverse impacts to Gila River riparian habitats and aboriginal water rights. PDSI's ongoing technical and economic evaluation of this property are, in part, focused on the resolution of these problems. Should technically and logistically viable solutions to water infiltration into the Sanchez mine be developed, PDSI would consider this property practicable, as defined by the 404(b)(1) guidelines, and will actively pursue mine development efforts.

This type of evaluation is typical of the procedure PDSI and other mining companies follow to minimize the risk of developing a property that lacks historical operating information, such as Sanchez. This evaluation program is expected to be completed over the next two to three years. Following completion of this program, pre-feasibility and feasibility studies will be conducted by PDSI to assess the economic potential of developing the Sanchez property in conjunction with PDSI's other Safford Mining District resources.

2.3.11. Alternative K: Develop Lone Star. This alternative would involve developing the Lone Star mineralized deposit prior to development of the Dos Pobres/San Juan Project. Because geologic exploration studies are still ongoing to characterize the ore body and determine its extent, this alternative is only conceptual at this time. However, preliminary exploration by PDSI of the Lone Star deposit indicate that it contains an estimated 1.6 billion tons of leachable ore. The mine would be a leach operation similar to Dos Pobres/San Juan, with one pit, leach stockpile facilities, and development rock stockpiles. The Lone Star resource is the least explored and understood resource in the Safford Mining District. The

Lone Star resource currently does not have sufficient exploration drilling to fully define the nature and extent of the ore body. The extent of conceptual foreseeable uses, as currently understood, is depicted in Figure 12. This development is independent of PDSI operations at the Dos Pobres/San Juan project.

Practicability Determination: Development of this alternative is not practicable at this time due to the limited information available upon which to prepare a mine plan and determine project feasibility. Additional exploration drilling and leach recovery test work is expected to take place during the next two to three years prior to commencing mine planning and economic analysis. At that time, a pre-feasibility study will be completed to determine the economic viability of the project. Pending completion of resource evaluation, test work, and favorable economic results from the pre-feasibility study, permitting activity could be initiated in four to five years. Assuming a two to three year-permitting schedule, this could allow for mining activity to commence at Lone Star in six to eight years.

# 2.4. COMPACTIBLE SOIL BORROW SOURCE ALTERNATIVE DESCRIPTION AND PRACTICABILITY DETERMINATION

In the course of evaluating alternative mine configurations and developing the liner design, two alternative sources of compactible soils were identified. These sources are known as the Lone Star and Watson Wash/Reduced Lone Star Compactible Soil Borrow Areas. Each of these is discussed below. Graphic presentation of these compactible soil borrow alternatives is provided in the context of the proposed Dos Pobres/San Juan Project Plan of Operations which is referred to as Alternative I — Single Reduced Leach Pad/Crush Convey/Haul Truck Placement in this alternatives analysis.

Approximately 1.5 to 2 million cubic yards of compactible soil will be required for liner construction. This range reflects the range of material types being considered and compaction ratios associated with each.

2.4.1. Lone Star Compactible Soil Borrow Source. The Lone Star Compactible Soil Borrow Source (LSBS) is located in Sec. 23 T6S, R26E, (Figure 13). This site is approximately 4.5 miles southeast of the Alternative I leach pad facility. Material would be transported by truck to the Leach Stockpile along an approximately 70-foot wide roadway constructed for that purpose. The roadway would be constructed with 40 by 100-foot turnouts spaced at approximately 1,000 foot intervals.

The compactible soil material to be mined is approximately 10 feet below the surface and the total excavation depth will be approximately 50 feet. The compactible soil in LSBS is clay from an old lake bed deposit. It is relatively homogeneous, with only occasional layers of fine sand or low plasticity clay and silt. The clay in this deposit is generally stiff and dry to lightly moist. Overburden from the borrow area

Facility. Each of these two facilities would be configured and sized to satisfy requirements of the proposed Mine Plan of Operations.

2.5.1. East Plant Location. The East Plant Site would be located on PDSI's patented Lone Star property and would provide a centralized location for potential long-term District development (Figure 14). The plant would receive pregnant leach solution (PLS) from a PLS collection tank below the leach stockpile. Stainless steel and HDPE pipelines would transport PLS to the East SX/EW plant location. Plant feed and raffinate pipelines would be constructed along a common corridor approximately four miles long.

The SX plant would include a plant feed pond, mixer-settler tanks, a tank farm, and raffinate tanks and pumping plant. The plant feed tank would provide surge capacity for incoming PLS. Raffinate tanks would provide surge protection for raffinate solution. The electrowinning (EW) tank house would contain 280 electrowinning cells capable of producing upto 250 million pounds of cathode copper per year. The tank farm would be constructed in a concrete-lined containment area that would be excavated and designed to contain any stormwater runoff and process solution overflows from the SX/EW plant. These solutions would be collected in a 1 million gallon stainless steel tank to be constructed within the containment area. The tank farm would also house electrolyte and reagent storage, and process tanks and filter systems.

Practicability Determination: This alternative is logistically, economically, and technically practicable.

2.5.2. West Plant Location. The West Plant Site would be located immediately southwest of the Alternative I leach stockpile (Figure 14) in section 8, T6S and R26E. System components and general layout are similar to the East Plant Site, except that the four mile pipeline corridor would not be required.

Practicability Determination: This alternative is logistically, economically, and technically practicable.

will be deposited to the west of the borrow area. The total surface disturbance of this site will be approximately 311 acres (226 acres of borrow pit and 45 acres of overburden disposal area, and ca 40 acres for the haul road).

Practicability Determination: This alternative is logistically, technically, and economically practicable.

2.4.2. Watson Wash/Reduced Lone Star Compactible Soil Borrow Source Alternative. The Watson Wash Compactible Soil Borrow Source (WWBS) is located in portions of Sections 4,5,8, and 9 of T6S, R6E (Figure 13) and would be utilized in conjunction with a reduced LSBS. This site is located almost entirely below the southern end of the proposed leach stockpile described in Alternative I. The material to be mined from this site is a basin fill material, characterized by surface lying rock overlying a shallow depth (2-3 feet) of silty clay intermixed with volcanic gravel and cobble fractions with occasional boulders. Underlying this layer is a less weathered material characterized by slightly to strongly cemented silty gravel with caliche.

During the course of grubbing and clearing operations at the site, fine materials salvaged from the top 2 to 3 feet of "soil" will be separated to provide material necessary for leach stockpile liner construction. Oversized material will be stockpiled for other uses. The total acreage of disturbance associated with this operation will be 664 acres. Approximately 389 acres of this area is within areas that would be disturbed by development of the leach stockpile facility as proposed in Alternative I. The total area of surface disturbance in addition to disturbance that would occur with implementation of Alternative I would be 275 acres.

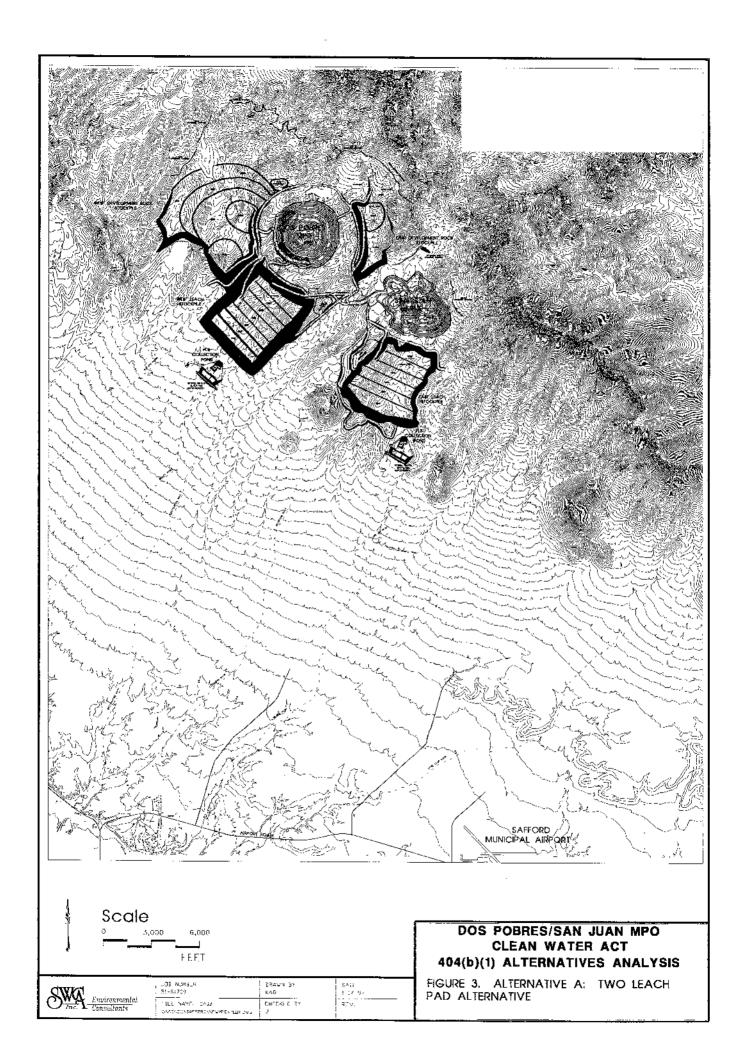
The Watson Wash Borrow area will provide approximately half of the compactible soil required for the Alternative I leach stock pile configuration. Additional material needed to construct the remaining portions of the liner design will be obtained from the LSBS location.

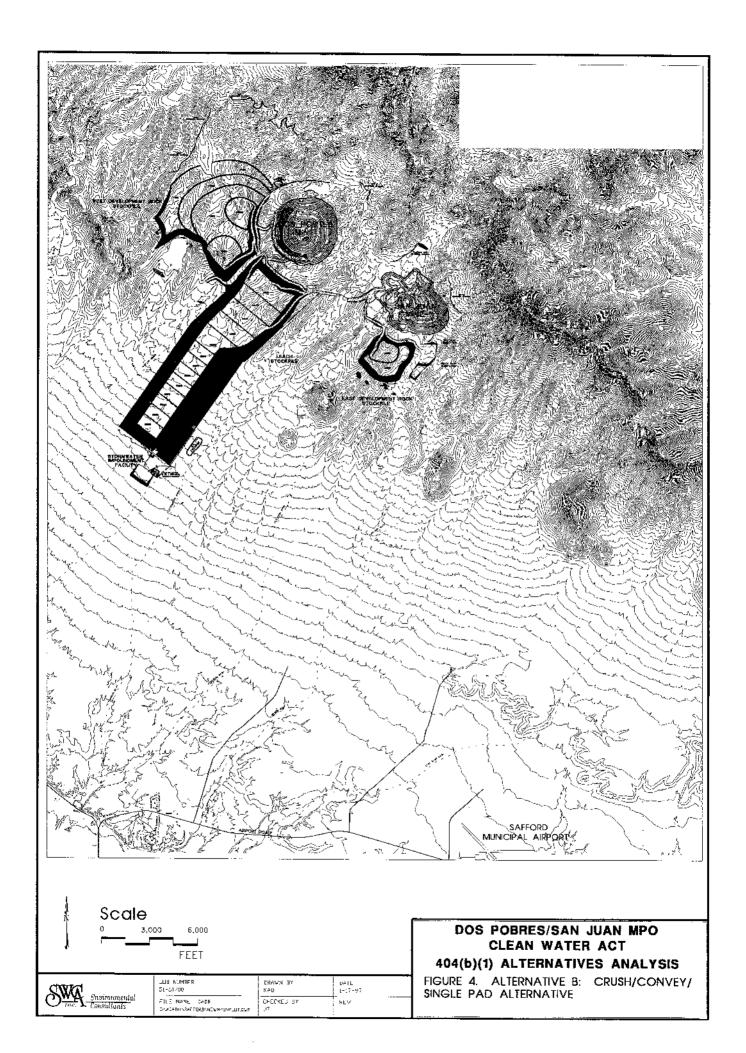
Practicability Determination: PDSI has determined that the compactible soil material associated with the Watson Wash site does not meet project needs. The Watson Wash/Reduced Lone Star Compactible Borrow Source is not practicable.

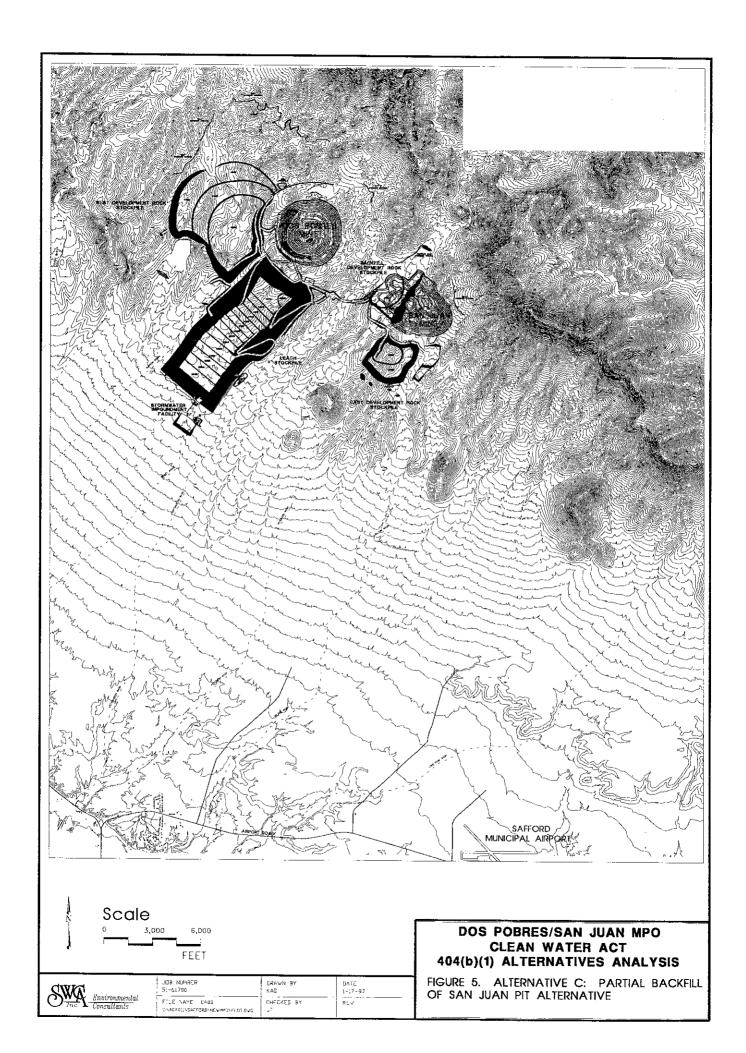
#### 2.5. SX/EW PLANT LOCATION

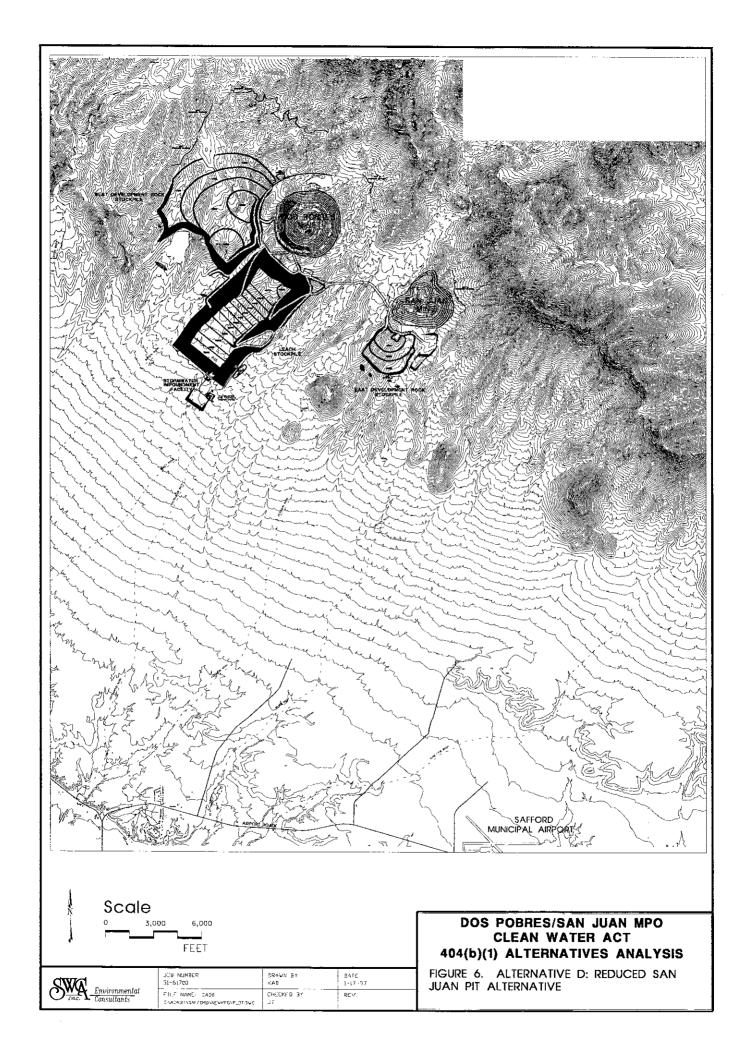
Two SX/EW plant locations have been evaluated. The East Plant Location is centrally located within the Safford Mining District and would conceivably support future development at Lone Star and possibly the Sanchez project site. The West Plant Location is located adjacent to the Dos Pobres/San Juan Leach

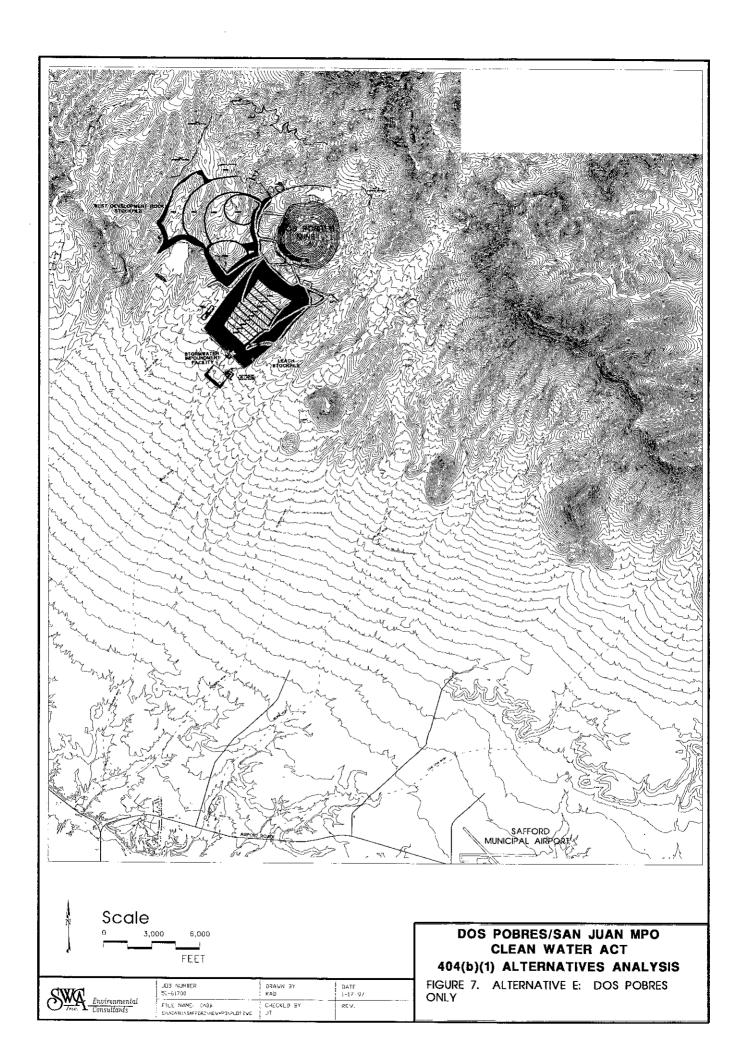
#### Alternatives ALTERNATIVE ALTERNATIVE **ALTERNATIVE** ALTERNATIVE D ALTERNATIVE E **ALTERNATIVE** ALTERNATIVE ALTERNATIVE ALTERNATIVE B ALTERNATIVE ALTERNATIVE Crush Dos Pobres Only Mine Plan of Crush Crush Convey/Single San Juan Only Crush Develop Lonesta Operations Convey/Single Crush Single Convey/Single Develop Leach Convey/Single Ore Deposit Prio Convey/Single Reduced Area Leach Pad Leach Pad/Partial Pad/Reduced San Sanchez Ore to DP/SJ Leach Pad/No 700' High Leach Backfill of San Leach Pad Deposit Prior Juan Mine Set Back for Juan Mine Pad to DP/SJ Sulfide Pit Limits Leachable Ore (KTONS) 626,361 626,361 626,361 526,813 294,986 331.375 626,361 Unknown 626,361 626,361 191,000 Development Rock 384,743 384,743 (KTONS) 384,743 367,453 340,645 44.098 384,743 384,743 384.743 200,640 Unknown Pit Size (Acres) Dos Pobres: 319 Dos Pobres: 319 Dos Pobres: 319 Dos Pobres: 319 San Juan: 323 Dos Pobres: 319 Dos Pobres: 0 San Juan: 323 Dos Pobres: 319 San Juan: 323 Dos Pobres: 319 DosPobres: 319 Lone Star. San Juan: 215 San Juan: 0 (215 After Backfill) 277 San Juan: 323 San Juan: 323 San Juan: 323 Unknown San Juan: 323 Pit Bottom Dos Pobres Dos Pobres Dos Pobres Dos Pobres Elev./Depth 2600/1400 Dos Pobres 2600/1400 2600/1400 Dos Pobres Dos Pobres 2600/1400 San Juan 2600/1400 San Juan 2600/1400 2600/1400 San Juan 2600/1400 3100/1000 San Juan Unknown Unknown 3100/1000 3100/1000 San Juan San Juan 3100/1000 San Juan 3100/1000 3100/1000 3100/1000 3100/1000 Leach Pad(s) Size Dos Pobres: 656 1301 (Acres) 985 799 San Juan: 506 532 588 985 676 985 484 Unknown Max Leach Pad Elev. Dos Pobres: 4278 4100 (Feet above msl) 4305 4305 San Juan: 4225 4275 4275 4275 4550 4305 Unknown Unknown No. Dev. Rock Backfill: 108 Dos Pobres:782 Stockpile Size Dos Pobres:782 Dos Pobres:744 Dos Pobres:782 Dos Pobres:782 450 782 San Juan: 256 San Juan: 170 Dos Pobres: 782 Dos Pobres: 782 (acres) San Juan: 169 256 San Juan: 256 San Juan: 170 33 Unknown San Juan: 170 San Juan: 170 Development Rock West: 4250 Stockpile Elevation West: 4280 West: 4200 West: 4205 San Juan: 4250 East: 4480 West: 4300 San Juan: 4250 4250 West: 4250 West: 4250 4150 San Juan: 4100 Unknown Unknown San Juan: 4150 San Juan: 4250 San Juan: 4250 Other Description Run of mine This alternative Partial backfill of the A portion of the San This alternative This alternative operation with no The primary This alternative would use a single This alternative is Data based upon Information pit would begin in year Juan pit would be left would leave the San crusher facilities: would leave the difference between would be similar to existing Sanchez available based leach pad; ore similar to 10 of the mine after undeveloped (ca. Juan reserves Dos Pobres leach stockpile this alternative and would be placed on Alternative I except MPO the western portion of Alternative B upon Foreseeab 31%) to limit mine unutilized. Leach resources Alternative I is the slopes at 2H:1V: the pad as run of for the leach the San Juan pit was except that the Use Data activity in the vicinity and development this alternative unutilized. The elimination of the stockpile which mine and some ore mined out. The longer conveyor/stacker of Peterson Wash. rock stockpiles leach stockpile 1300 foot set back includes a 1300 would have a would be crushed system would be Production. haulage profile for San would be reduced in would remain in from the Dos foot setback at and placed on the Juan is only partially smaller footprint eliminated and operation and size accordingly. the general Pobres oxide ore Dos Pobres. pad with offset by the shorter material placed support areas ar The setback at the location of previous body. using haul trucks. 5,835 acres. conveyor/stacker profile for San Juan. Dos Pobres pit alternatives to Transition areas system. The leach would be retained. avoid placement in are 523 acres. stockpile would Cottonwood and be significantly Peterson washes. shorter and would have 2:1 slopes. Table 2

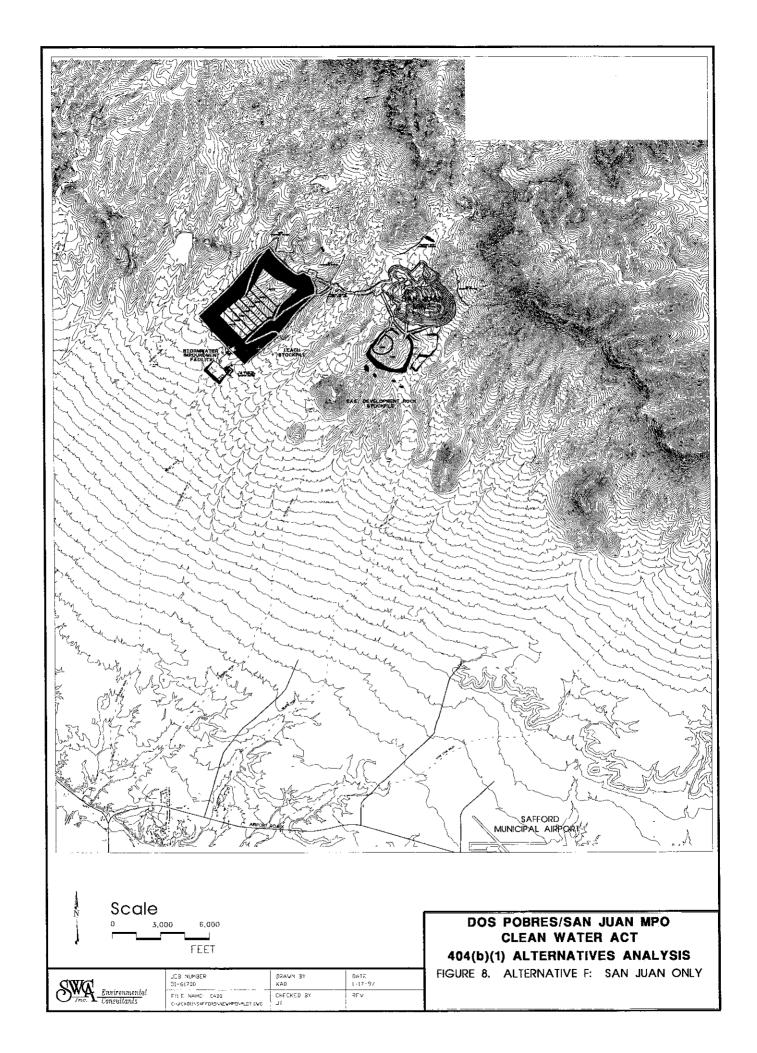


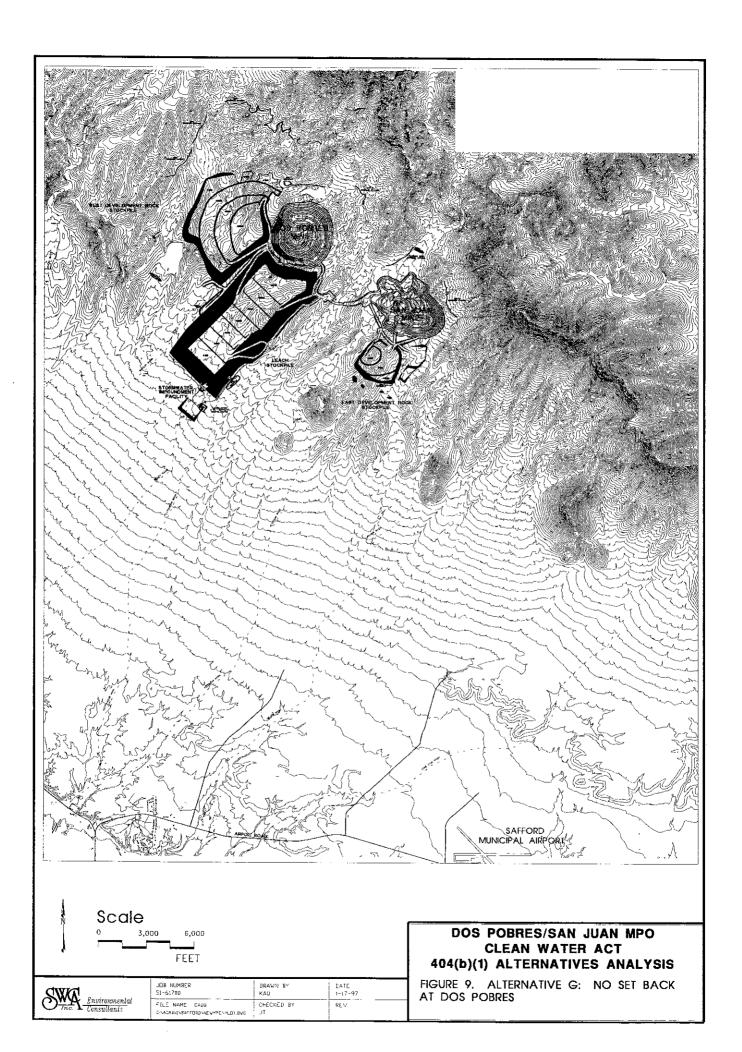


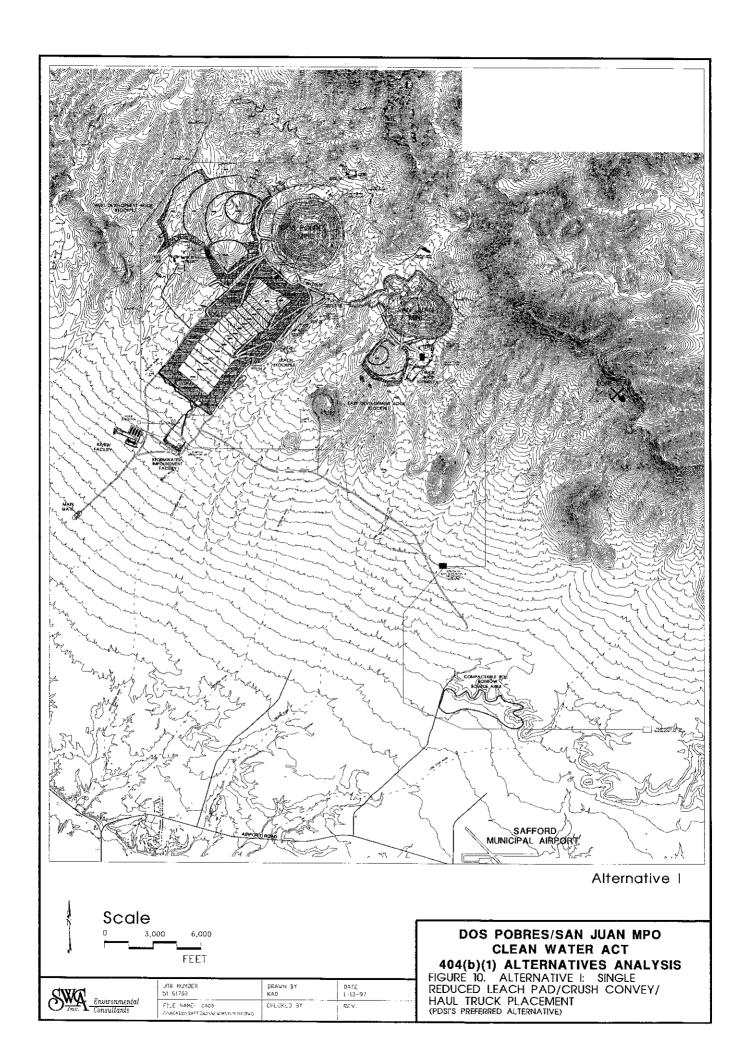


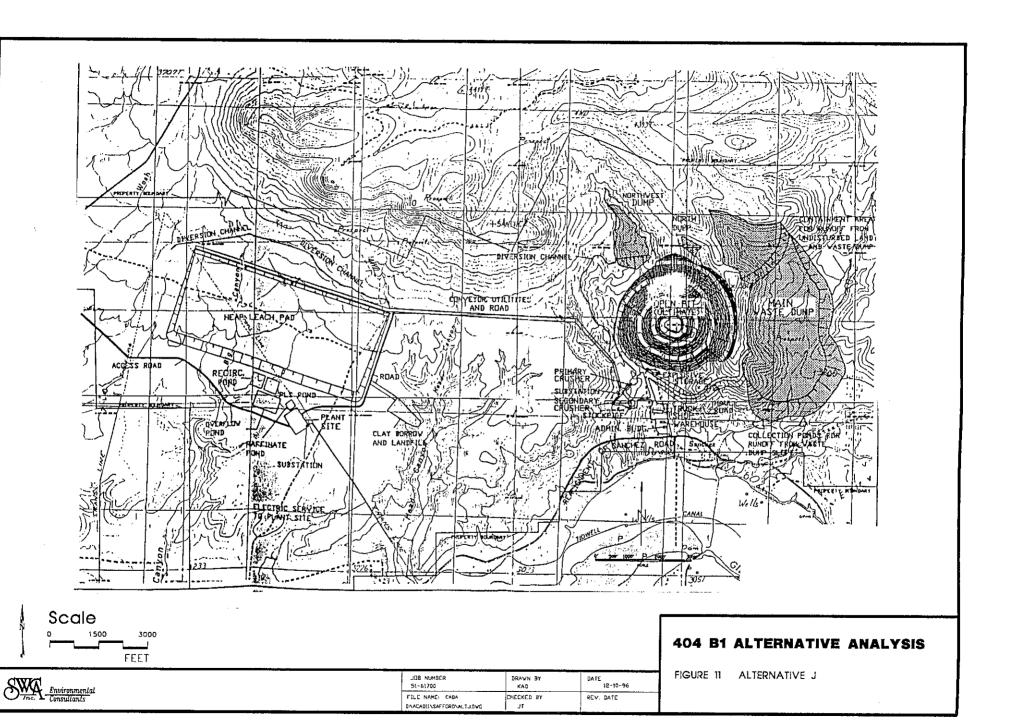


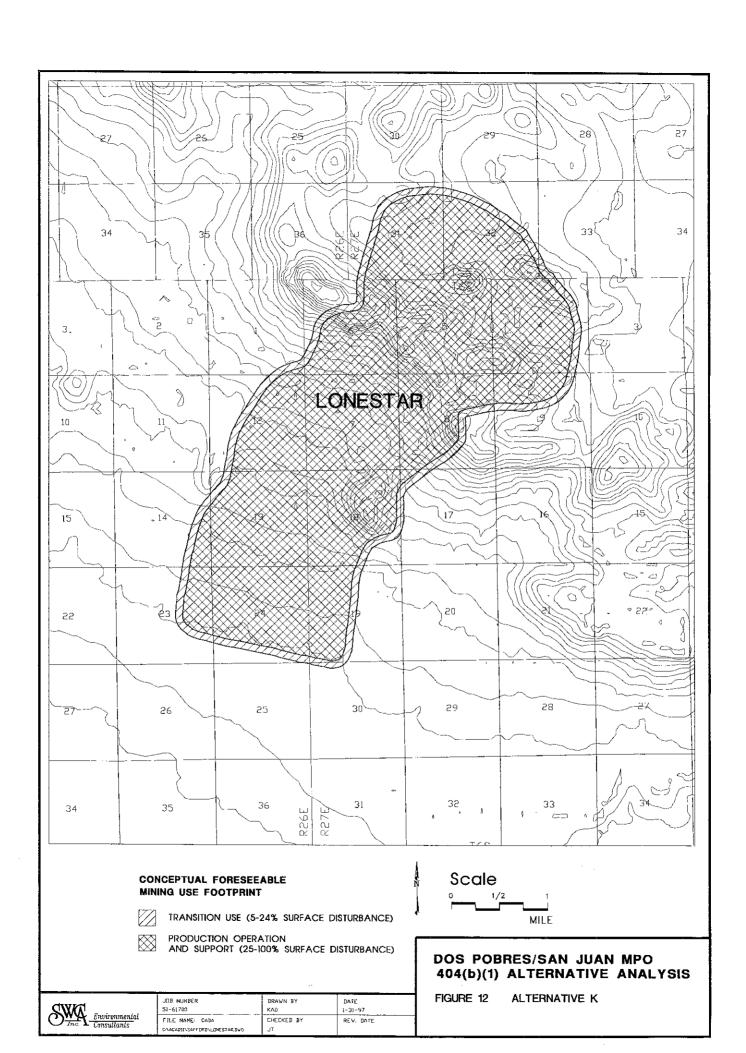


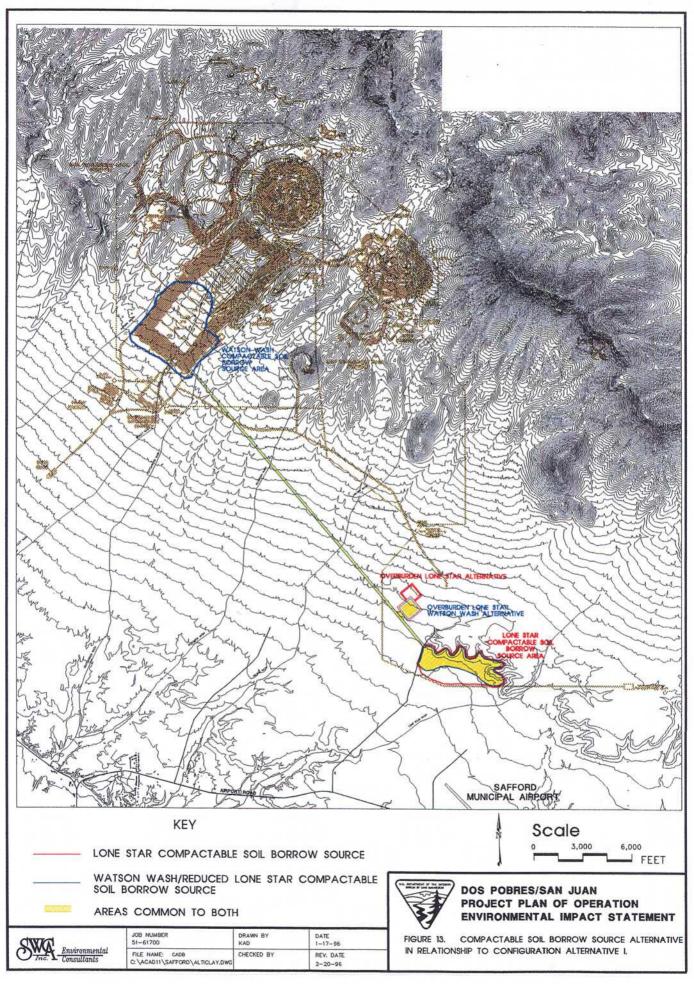


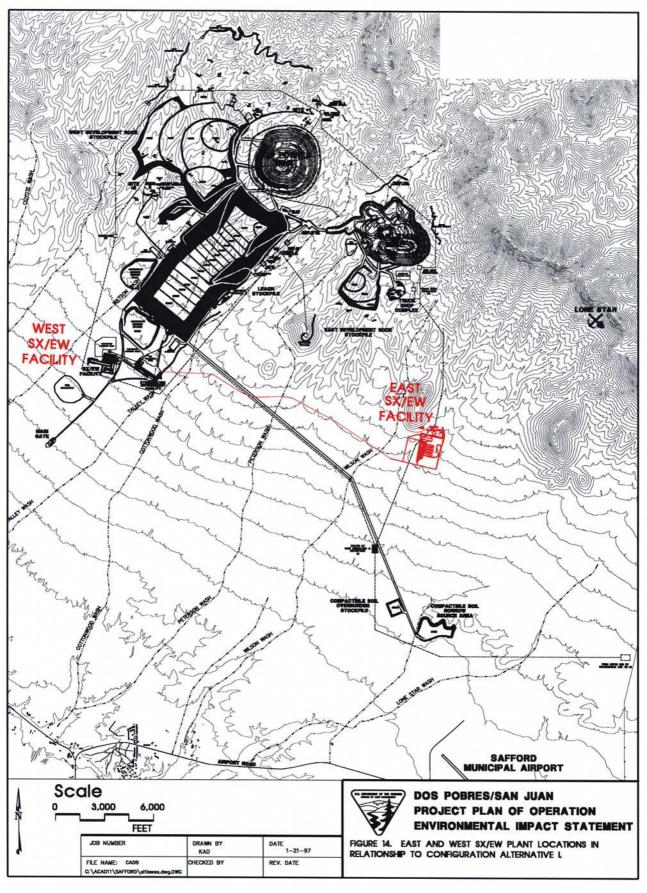












#### 3. SUMMARY AND CONCLUSIONS

An alternatives analysis is required by the U.S. Army Corps of Engineers (COE) and the U.S. Environmental Protection Agency (EPA) to demonstrate compliance with guidelines established under the Clean Water Act (CWA), Section 404(b)(1) (40 CFR §230) for avoidance and minimization of impacts to waters of the United States. This analysis is designed to identify practicable alternative mine plan configurations for the Dos Pobres/San Juan Project proposed by PDSI.

The formulation of alternatives to the proposed Mining Plan of Operations (the Proposed Action) has been based upon information provided by the COE, BLM, and PDSI. Each alternative's practicability, in light of the specific technical, logistic, and economic criteria, is evaluated. Many of the alternatives considered were developed to minimize impacts to waters of the United States which in the project area are primarily ephemeral washes. None of the configuration or location alternatives considered would completely avoid impacts to waters of the U.S. and all practicable configuration or location alternatives would affect waters of the United States to varying degrees.

A total of nine configuration alternatives (Alternatives A-I), two location alternatives (J and K), two compactible soil borrow source alternatives, and two SX/EW alternatives were considered (Table 2).

#### 3.1. CONFIGURATION ALTERNATIVES

Table 3 summarizes the practicability determination for configuration and location alternatives. Of the 11 alternatives considered, only alternative C, Partial Backfill of San Juan Pit, and alternative I, Single Reduced Leach Pad/Crush Convey w/ Haul Truck Placement, are practicable configuration alternatives, considering technical, logistic, and economic measures of practicability. The identification of alternatives considered represents a reasonable range of alternatives that exist to achieve the project's purpose and need and are technically capable of being accomplished. All alternatives eliminated were considered impracticable for logistic and/or economic reasons. Considering the constraints imposed by the ore bodies, the distribution of other ore reserves in the project area, and the nature and distribution of waters of the U.S. in the project area, the development of another practicable alternative similar or not to the range of alternatives considered in this analysis, that significantly minimizes or avoids impacts to waters of the U.S., is unlikely.

#### Table 3. List of Alternatives considered.

#### **CONFIGURATION ALTERNATIVES**

- Alternative A Two Leach Stockpiles
- Alternative B Single Leach Stockpile w/ Conveyor Stacker
- Alternative C Partial Backfill of San Juan Pit
- Alternative D Reduced San Juan Pit
- Alternative E Dos Pobres Mine Only
- Alternative F San Juan Mine Only
- Alternative G No Set Back at Dos Pobres
- Alternative H A Single 700 ft. High Leach Stockpile
- Alternative I Single Reduced Leach Pad/Crush Convey w/ Haul Truck Placement

#### SAFFORD DISTRICT LOCATION ALTERNATIVES

- Alternative J Develop Sanchez Mine First
- Alternative K Develop Lone Star Mine First

### COMPACTIBLE SOIL BORROW SOURCE ALTERNATIVES

- Lone Star Compactible Soil Borrow Source
- Watson Wash/Reduced Lone Star Compactible Soil Borrow Source

# SOLVENT EXTRACTION/ELECTROWINNING PLANT LOCATION ALTERNATIVES

- East SX/EW Plant Location
- West SX/EW Plant Location

# 3.2. COMPACTIBLE SOIL BORROW SOURCE ALTERNATIVES

Only the Lone Star Compatible Soil Borrow source alternative is considered technically and logistically practicable.

#### 3.3. SX/EW LOCATION ALTERNATIVES

Both of the SX/EW location alternatives are practicable. Each of these alternatives would be sited to avoid impacts to waters of the United States. The East facility would require construction of a pipeline corridor to transport PLS and raffinate solution between the SX/EW plant and the Leach Stockpile. This alternative would result in pipeline crossings of approximately 6 drainages identified as waters of the United States, including Talley, Cottonwood, Peterson, and Wilson Washes.

Table 4	Configuration and Safford District Location Alternatives										
	ALTERNATIVE A Mine Plan of Operations	ALTERNATIVE B Crush Convey/Single Leach Pad	ALTERNATIVE C Crush Convey/Single Leach Pad/Partial Backfill of San Juan Mine	ALTERNATIVE D Crush Convey/Single Leach Pad/Reduced San Juan Mine	ALTERNATIVE E Dos Pobres Only	ALTERNATIVE F San Juan Only	ALTERNATIVE G Crush Convey/Single Leach Pad/No Set Back for Sulfide Pit Limits	ALTERNATIVE H Crush Convey/Single 700' High Leach Pad	ALTERNATIVE I Single Reduced Area Leach Pad	ALTERNATIVE J Develop Sanchez Ore Deposit Prior to DP/SJ	ALTERNATIVE M Develop Lonesta Ore Deposit Prio to DP/SJ
Land Position	Conflicts with Melody claims	ок	ОК	ОК	ОК	ОК	ок	ОК	ок	ОК	ОК
Haul Distances < 2.5 miles	YES	MOST	MOST	MOST	YES	YES	MOST	YES	YES	MOST (based upon existing MPO)	NOT KNOWN
Spatially compatible with development of other ore reserves in the Safford Mining District	YES	YES	YES	YES	YES	YES	NO - Interferes with Dos Pobres Sulfide Ore reserve development	POSSIBLY Reduction in the ability to provide additional storage capacity could limit development opportunities at DP and SJ	YES	YES	YES
Sufficient data to determine economic and Technical feasibility	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	NO
Leach Stock Pile Capacity Includes Buffer	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES
dictional Waters of Impacts (acres)	118.4 Direct =25.2 Indirect = 93.2	115.7 Direct = 22.5 Indirect = 93.2	113.0 Direct = 19.8 Indirect = 93.2	82.7 Direct = 16.5 Indirect = 66.2	78.9 Direct = 14.6 Indirect = 64.3	58.8 Direct = 9.1 Indirect = 49.7	107.0 Direct = 15.9 Indirect = 91.1	110.2 Direct = 17.0 Indirect = 93.2	114.6 Direct = 21.4 Indirect = 93.2	13 per ACOE	73.7 Direct = 40.3 Indirect = 33.4
CTICABLE	NO - The conflict with the Melody Claims makes this alternative impracticable	NO – the feasibility of employing the elevating conveyor is technically uncertain.	YES — Economics marginal because of a longer haulage profile for Dos Pobres, but variance associated with economic projections make it acceptable	NO — approximately 31 percent of the San Juan ore body would be undeveloped, lost revenues would have a significant adverse affect on NPV of capital and operating expenses	NO — Economically Not practical; leachable ore reserves are reduced by approximately 53 percent; lost revenues would have a significant adverse affect on NPV of capital and operating	NO Economically Not Practical; this alternative reduces leachble ore reserves by 47%, lost revenues would have a significant adverse affect on NPV of capital and operating	NO Would interfere with potential future development of Dos Pobres Sulfide Deposit	NO Pad design would not provide buffer capacity for additional material that could be found during development; After year 8 area:volume ratio reduces recovery	YES	Not at this time — Data collection and prefeasibility studies necessary to determine project viability will take a number of years to complete	Not at this time - Data collection and prefeasibility studies necessary to determine project viability will take a number of years to complete